Amendments to the Specification

Please replace the paragraph beginning on page 4, line 1, with the following rewritten paragraph:

It is another object of the present invention to provide a scanning microscope which ~~a~~ allows ~~to set~~ the system parameters to be set even if the user ~~requires~~ has little or indeed no technical knowledge of the effects of the system parameters ~~to be set~~.

Please replace the paragraph beginning on page 4, line 10, with the following rewritten paragraph:

What has been recognized according to the present invention is that, for example, the learning phase for operation of a scanning microscope can be made considerably shorter for an inexpert user if the user inputs into the control computer, on the basis of a specimen image that has first been acquired, the extent to which he or she wishes to have it modified in a subsequent acquired image. In particularly advantageous fashion, this does not require ~~he~~ the user to input the system parameters directly or to accurately know or learn about the technical effects of the system parameters of the scanning microscope. For example, the user specifies that the new image to be acquired is to be "brighter" or "sharper." As a result of this input of an image quality feature, at least one system parameter of the scanning microscope that is to be set in modified fashion is then calculated, and another image can be acquired with modified system parameters of the scanning microscope. Inverse calculation operations are performed in the conversion of image quality features into system parameters, the technical correlations between system parameters and image quality features being taken into account. For example, a calculation is made as to which system parameters of the confocal scanning microscope need to be modified in order to yield the image quality features that are to be set. Thus, advantageously, not only is it possible to shorten a user's learning phase for operation of the scanning microscope, but the entire scanning microscope operation or setting phase can also be made more user-friendly. Ultimately, the user inputs the manner in which the acquired image is to be modified, in that specific case, in terms of its image quality features. After a conversion into system parameters of the scanning microscope, the desired image improvement can be achieved upon acquisition of another image.

Please replace the paragraph beginning on page 15, line 22, with the following rewritten paragraph:

FIG. 5 schematically shows an exemplary embodiment of a confocal scanning microscope. This is not, however, to be construed as a limitation of the invention. It is sufficiently clear to one skilled in the art that the invention can also be implemented with a conventional scanning microscope. Illuminating light beam 25 coming from at least one illumination system 26 is directed, by a beam splitter or a suitable deflection means 27, to a scanning module 28. Before illuminating light beam 25 strikes deflection means 27, it passes through an illumination pinhole 29. Scanning module 28 encompasses a gimbal-mounted scanning mirror 30 that guides illuminating light beam 25 through a scanning optical system 31 and a microscope optical system 32 and over or through a specimen 33. In the case of non-transparent specimens 33, light beam 25 is guided over the specimen surface. With biological specimens 33 (preparations) or transparent specimens, light beam 25 can also be guided through specimen 33. For these purposes, non-luminous preparations are prepared, if applicable, with a suitable dye (not depicted, since it is established existing art). This means that different focal planes of the specimen 33 are scanned successively by illuminating light beam 25. A position sensor 35 that determines the positional data of the acquired image data is connected to scanning module 28. Subsequent combination of the positional data and image data then yields a two-or three-dimensional frame (or image) of specimen 33. Illuminating light beam 25 coming from illumination system 26 is depicted as a solid line. The light proceeding from specimen 35 defines a detected light beam 36. This travels through microscope optical system 32, scanning optical system 31, and via scanning module 28 to deflection means 27, passes through the latter, and arrives via a detection pinhole 37 at at least one detector 38, which is embodied as a photomultiplier. It is clear to one skilled in the art that other detection components, e.g. diodes, diode arrays, photomultiplier arrays, CCD chips, or CMOS image sensors, can also be used. Detected light beam 36 proceeding from or defined by specimen 33 is depicted in FIG. 5 as a dashed line. In detector 38, electrical detected signals proportional to the power level of the light proceeding from specimen 33 are generated. The data generated by detector 38 are forwarded to a control computer 39, which is connected to an operating and output console 40 of the control program of the confocal scanning microscope for inputting at least one modified image quality feature. The control computer 39 controls the acquisition of images of a specimen 33 with the scanning microscope. The operating and output console 40 includes a keyboard 41[[,]] as a setting apparatus 41 for the components of the microscope system. Additionally associated with

control computer 39 is an input means that comprises e.g, and a mouse 43. A display 44 is connected to the control computer 39 as a part of the operating and output console 40. At least one image quality feature can be converted by the control computer 39 into at least one system parameter of the scanning microscope that can be set.